



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#111/Response
Shawn
10/23/02

In re Patent Application of

SALAMAH et al.

Atty. Ref.: 839-893

Serial No. 09/742,279

Group: 2834

Filed: December 22, 2000

Examiner: Cuevas, P.

For: RE-ENTRANT SPACEBLOCK CONFIGURATION FOR ENHANCING CAVITY
FLOW IN ROTOR ENDWINDING OF ELECTRIC POWER GENERATOR

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October 17, 2002

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

REQUEST FOR RECONSIDERATION

Responsive to the Official Action dated July 17, 2002, kindly enter the following remarks.

Claims 1-18 remain pending.

Claims 1-2, 4-5, 7, 9-10, 12-13, 15 and 17-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Staub et al. in view of Aiba. It is noted that claims 3, 6, 8, 11, 14 and 16 were not mentioned in the Examiner's statement of the rejection but from the Examiner's arguments, it is understood that the Examiner is also rejecting these claims over the Staub/Aiba combination. Applicants respectfully traverse this rejection.

In order to prove obviousness, a challenger must present prior art references which disclose the claimed subject matter of the patent/application in question. If separate prior art references each disclose separate elements of a claim, the challenger must also show some teaching, suggestion, or incentive in the prior art that would have

led one of ordinary skill in the art to make the claimed combination. See, e.g., Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 297 n.24, 304-05 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986). In determining obviousness, there must be some reason other than hindsight for selectively combining the prior art references to render the claimed invention obvious. See, e.g., Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143 (Fed. Cir. 1985).

Staub is cited as providing a generic disclosure of a generator that shows the conventional parts comprising a generator rotor end winding, as is also illustrated, for example, in Applicants' Figures 1 and 2. As noted by the Examiner, however, Staub does not teach or suggest the concept of providing a downstream wall of a spaceblock that has a non-planar contour to lower a suction pressure developed adjacent the trailing edge of the space block to enhance cooling flow. In other words, Staub does not teach or in any way suggest the space block configuration claimed by Applicants. The Examiner seeks to have overcome this deficiency of Staub by citing the secondary reference to Aiba.

With all due respect, Aiba has no relation to the structure of the invention nor to a structure of the type disclosed in Staub. The Aiba patent relates to a cooling invention for stators. Aiba does not teach or suggest a cooling invention for rotors nor would the skilled artisan be taught by Aiba, or find it self-evident, that Aiba's teachings would be of any use or advantage in the Staub rotor structure. More particularly, Aiba teaches the modification of a stator "spacer block" which the Examiner has apparently confused with a rotor "spaceblock" but these two structures are very different. In a stator, a spacer block is typically a plate of electromagnetic iron that is used to space, e.g., two neighboring iron laminates to provide a cooling flow passage in the main part of the stator core (not the stator end windings). In contrast, in rotors, the "spaceblock" is typically a piece of fiberglass reinforced plastic that is used to mechanically space two rotor coils from each other, in the rotor end windings (not the main rotor body). Therefore, the skilled artisan would understand Aiba's patent applies to a totally different part of the machine.

Additionally, it is submitted that the Aiba patent teaches a cooling channel in his spacer block that results in a new forced convection cooling region. The invention disclosed and claimed by Applicants does not involve any cooling channels in spacer blocks but instead provides and claims a spaceblock downstream wall configuration to alter the flow field in a unique fashion so as to increase the circulation in a shear- and buoyancy-driven cavity in an endwinding. The fluid dynamics of a passage as taught by Aiba and a non-planar contour of a downstream wall of a spaceblock provide entirely different fluid dynamics.

It is further respectfully noted that contrary to the Examiner's interpretation of Aiba, Aiba does not teach or suggest a re-entrant configuration on a downstream wall of a spacer block. Rather, Aiba teaches the formation of a groove in a spacer block sidewall to define a channel between the spacer block and the laminate against which it is disposed. It is noted in this regard that the flow in the Aiba structure is radially outward flow so the "downstream" wall would be the radially outer end of the spacer block, not the axial side face thereof that defines the flow channel with the laminate. Thus, Aiba does not in any way relate to the configuration of a spaceblock in a rotor structure and, indeed, does not even relate to the configuration of a downstream wall of a spacer block.

Section 103 does not allow the Examiner to engage in picking and choosing from the prior art only to the extent that it will support a holding of obviousness, while excluding parts of the prior art essential to the full appreciation of what the prior art suggests to one of ordinary skill in the art. In re Wesslau, 147 USPQ 391 (CCPA 1975).

For all the reasons advanced above, it is respectfully submitted that the skilled artisan, without the motivation provided by knowledge of Applicants' disclosure, would not combine Staub and Aiba because these patents relate to two entirely different parts of a dynamoelectric machine. Even if one were to look to Aiba, furthermore, there would be no teaching or suggestion of providing a spaceblock with a downstream wall configuration to lower a suction pressure developed adjacent a trailing edge of the space block as claimed by Applicants. Indeed, even if a flow passage were to be

defined through the space blocks of Staub, according to Aiba's teachings, that flow passage would be defined between the spacer block and the copper turns 142, which would be in a sidewall of the space block, not in the downstream wall. For all the reasons advanced above, reconsideration and withdrawal of this rejection are requested.

As regards the Examiner's rejection of claims 3, 6, 11 and 14, the Examiner's characterization of a circular concave downstream wall as being an "obvious matter of design choice" is not well taken. In this regard, Aiba provides a generally square or rectangular passage in a side face of the spacer block. In contrast to Aiba, Applicants propose a particular, curved configuration for the downstream wall of the space block to lower a suction pressure developed adjacent a trailing edge of the space block. It is therefore respectfully submitted that Applicants have clearly disclosed that the particular shape claimed creates a characteristic and desirable flow dynamic which is in no way suggested by Aiba. It is therefore respectfully submitted that the Examiner's dismissal of the claimed shape of the downstream wall as a matter of design choice is improper and not substantiated by any reference. In the event that the Examiner's position in this regard is maintained in any respect, it is respectfully requested that the Examiner cite evidence that the claimed downstream wall configuration is "known" so as to have been a choice to one skilled in the art. In the absence of evidence supporting this unsubstantiated conclusion, the Examiner's rejection in this regard is improper and cannot be maintained.

Rejections based on 35 U.S.C. §103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The Examiner has initial duty of supplying the factual basis for the rejection. The Examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis. See In re Wanery, 379 F.2d 1011, 1017, 154 USPQ 173, 177-78 (CCPA 1967). Because none of the references of record disclose the details of the claimed invention lacking in the primary reference, nor the unique advantages thereof, there can be no

suggestion to modify the structure to contain those features. See In re Civitello, 339 F.2d 243, 144 USPQ 10, (CCPA 1964).

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

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